

CLAIMS

1. A connector connection structure comprising: a first connector (108) on a housing (100) accommodating an electric device mounted in a vehicle; and a second connector (200) shaped so as to be fitted into said first connector (108) by inserting it
5 with a force not smaller than a predetermined amount,

wherein said second connector (200) has a contact (204) joinable with a contact (124) of said first connector (108) to be electrically connected, and

said second connector (200) includes a mechanism that is integral therewith for
10 increasing a force applied by an operator for insertion.

2. The connector connection structure according to claim 1, wherein said mechanism includes a rod-like insertion assist member (202) connected to said second connector (200) via a fulcrum,

15 said insertion assist member (202) generates said force not smaller than a predetermined amount by applying, with its one end's position being restricted, a rotation force to another end, and

said housing (100) includes a restriction means for restricting the position of said one end.
20

3. The connector connection structure according to claim 2, wherein said insertion assist member (202) is supported rotatably about said fulcrum.

4. The connector connection structure according to claim 2, wherein said
25 restriction means is a protrusion (102) provided on said housing (100) and formed in a position for said one end.

5. The connector connection structure according to claim 2, wherein said

restriction means is an opening provided on said housing (100) into which said one end can be inserted.

5 6. The connector connection structure according to claim 1, wherein said second connector is formed along a shape of said housing.

7. The connector connection structure according to claim 1, wherein said second connector is L-shaped.

10 8. The connector connection structure according to claim 1, wherein said mechanism includes a rod-like insertion assist member (404) in said second connector (400) whose one end's position is restricted,
said insertion assist member (404) has a groove (446) at a predetermined angle with respect to an insertion direction of said second connector (400),
15 a protrusion (430) slidable in said groove (446) is fixed to said housing (100),
and
said insertion assist member (404) generates said force not smaller than a predetermined amount by said protrusion (430) sliding along said groove (446).

20 9. The connector connection structure according to one of claims 2 to 8, wherein another end of said insertion assist member (404) is fixed to said housing (100) after said second connector (400) has been fitted into said first connector (108).

25 10. The connector connection structure according to claim 1, wherein said mechanism includes a rod-like insertion assist member (202) connected with said second connector (200) via a fulcrum,

said insertion assist member (202) generates said force not smaller than a predetermined amount by applying, with its one end's position being restricted, a

rotation force to another end, and

said housing (100) includes a restriction element for restricting the position of said one end.

5 11. The connector connection structure according to claim 10, wherein said insertion assist member (202) is supported rotatably about said fulcrum.

10 12. The connector connection structure according to claim 10, wherein said restriction element is a protrusion (102) provided on said housing (100) and formed in a position for said one end.

15 13. The connector connection structure according to claim 10, wherein said restriction element is an opening provided on said housing (100) into which said one end can be inserted.

 14. The connector connection structure according to one of claims 10 to 13, wherein another end of said insertion assist member (404) is fixed to said housing (100) after said second connector (400) has been fitted into said first connector (108).

20 15. A connector connection structure comprising: a first connector (108) on a housing (100) accommodating an electric device mounted in a vehicle; a second connector (200) shaped so as to be fitted into said first connector (108) by inserting it with a force not smaller than a predetermined amount; and a rod-like insertion assist member (308) connected, via a fulcrum, with an insertion assist mechanism (350) for
25 fitting said second connector (200) into said first connector (108),

 wherein said insertion assist member (308) generates said force not smaller than a predetermined amount for said second connector (200) by applying, with its one end's position being restricted, a rotation force to another end,

said second connector (200) includes a contact (204) joinable with a contact (124) of said first connector (108) to be electrically connected, and
said housing (100) includes a restriction means for restricting the position of said one end.

5

16. The connector connection structure according to claim 15, wherein said insertion assist member (308) is rotatably supported on said insertion assist mechanism (350).

10

17. The connector connection structure according to claim 15, wherein said second connector (200) is formed along a shape of said housing (100).

18. The connector connection structure according to claim 15, wherein said second connector (200) is L-shaped.

15

19. The connector connection structure according to one of claims 15 to 18, wherein said restriction means is a protrusion (300) provided on said housing (100) and formed in a position for said one end.

20

20. The connector connection structure according to one of claims 15 to 18, wherein said restriction means is an opening provided on said housing (100) into which said one end can be inserted.

25

21. The connector connection structure according to one of claims 15 to 18, wherein said insertion assist mechanism (350) has a member (306) connected with said one end, and

said restriction means is a protrusion (300) provided on said housing (100) and formed so as to restrict said member's (306) position.

22. The connector connection structure according to one of claims 15 to 18, wherein said insertion assist mechanism (350) has a member connected with said one end, and

5 said restriction means is an opening provided on said housing (100) into which said member can be inserted.

23. A connector connection structure comprising: a first connector (108) on a housing (100) accommodating an electric device mounted in a vehicle; a second connector (200) shaped so as to be fitted into said first connector (108) by inserting it
10 with a force not smaller than a predetermined amount; and a rod-like insertion assist member (308) connected, via a fulcrum, with an insertion assist mechanism (350) for fitting said second connector (200) into said first connector (108),

15 wherein said insertion assist member (308) generates said force not smaller than a predetermined amount for said second connector (200) by applying, with its one end's position being restricted, a rotation force to another end,

 said second connector (200) includes a contact (204) joinable with a contact (124) of said first connector (108) to be electrically connected, and

20 said housing (100) includes a restriction element for restricting the position of said one end.

24. The connector connection structure according to claim 23, wherein said insertion assist member (308) is rotatably supported on said insertion assist mechanism (350).

25 25. The connector connection structure according to claim 23, wherein said second connector (200) is formed along a shape of said housing (100).

26. The connector connection structure according to claim 23, wherein said

second connector (200) is L-shaped.

27. The connector connection structure according to one of claims 23 to 26,
wherein said restriction element is a protrusion (300) provided on said housing (100)
and formed in a position for said one end.

28. The connector connection structure according to one of claims 23 to 26,
wherein said restriction element is an opening provided on said housing (100) into which
said one end can be inserted.

29. The connector connection structure according to one of claims 23 to 26,
wherein said insertion assist mechanism (350) has a member (306) connected with said
one end, and

said restriction element is a protrusion (300) provided on said housing (100) and
formed so as to restrict said member's (306) position.

30. The connector connection structure according to one of claims 23 to 26,
wherein said insertion assist mechanism (350) has a member connected with said one
end, and

said restriction element is an opening provided on said housing (100) into which
said member can be inserted.